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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,367	10/27/2003	Bin Zhang	200310832-1	5792

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EXAMINER	
MORRISON, JAY A	
ART UNIT	**PAPER NUMBER**
2168	

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/694,367	ZHANG, BIN	
	Examiner	Art Unit	
	Jay A. Morrison	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. Claims 1-30 are pending.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Zheng et al. ('K-Harmonic Means – A Data Clustering Algorithm', HP Laboratories Palo Alto, October, 1999) ('Zheng' hereinafter).

As per claim 1, Zheng teaches

"selecting a set number of functions correlating variable parameters of a dataset" (pages 1-2, section 1);

"and clustering the dataset by iteratively applying a regression algorithm and a K-Harmonic Means performance function on the set number of functions to determine a pattern in said dataset" (pages 3-4, section 3).

As per claim 2, Zheng teaches

"said clustering comprises: determining distances between datapoints of the dataset and values correlated with the set number of functions" (pages 4-5, section 5);

"regressing the set number of functions using datapoint probability and weighting factors associated with the determined distances" (pages 4-5, section 5);

"calculating a difference of harmonic averages for the distances determined prior to and subsequent to said regressing" (pages 4-5, section 5);

"and repeating said regressing, determining and calculating upon determining the difference of harmonic averages is greater than a predetermined value" (pages 4-5, section 5).

As per claim 3, Zheng teaches

"said determining the distances comprises determining distances from each datapoint of the dataset to values within each function of the set number of functions" (pages 4-5, section 5).

As per claim 4, Zheng teaches

"said selecting and said clustering are conducted for a plurality of datasets each from a different data source" (data mining, page 1, Abstract).

As per claim 5, Zheng teaches

"said selecting and said clustering are conducted in parallel for each of the plurality of datasets" (page 1, Abstract).

As per claim 6, Zheng teaches

"determining a common coefficient vector to compensate for variations between similar sets of functions within the different data sources" (pages 4-5, section 5).

As per claim 7, Zheng teaches

"developing matrices from the dataset datapoints and the probability and weighting factors for each of the datasets prior to said reiterating" (pages 5-6, section 6);

"and determining the common coefficient vector from a composite of the developed matrices" (pages 5-6, section 6).

As per claim 8, Zheng teaches

"multiplying the similar sets of functions within the different data sources by the common coefficient vector" (pages 5-6, section 6).

As per claim 9, Zheng teaches

"selecting a set number of functions correlating variable parameters of a dataset" (page 1-2, section 1);

"determining distances between datapoints of the dataset and values correlated with the set number of functions" (pages 4-5, section 5);

calculating harmonic averages of the distances; regressing the set number of functions using datapoint probability and weighting factors associated with the determined distances" (pages 4-5, section 5);

"repeating said determining and calculating for the regressed set of functions" (pages 4-5, section 5);

"computing a change in harmonic averages for the set number of functions prior to and subsequent to said regressing" (pages 4-5, section 5);

"and reiterating said regressing, repeating and computing upon determining the change in harmonic averages is greater than a predetermined value to thereby determine a pattern in said dataset" (pages 4-5, section 5).

As per claim 10, Zheng teaches

"computing the datapoint probability and weighting factors" (pages 4-5, section 5).

As per claim 11, Zheng teaches

"developing matrices from the dataset datapoints and the probability and weighting factors prior to said reiterating" (pages 5-6, sectin 6).

As per claim 12, Zheng teaches

"amassing matrices developed from a plurality of datasets each from a different data source" (page 1, Abstract).

As per claim 13, Zheng teaches

"determining a common coefficient vector from the composite of matrices" (pages 5-6, section 6).

As per claim 14, Zheng teaches

"multiplying similar sets of functions within the different data sources by the common coefficient vector" (pages 5-6, section 6).

As per claim 15, Zheng teaches

"an input port configured to receive data" (page 1, Abstract);

"regress functions correlating variable parameters of a set of the data" (pages 4-5, section 5);

"cluster the functions using a K-Harmonic Mean performance function" (pages 3-4, section 3);

"and repeat said regress and cluster sequentially to thereby determine a pattern in said set of data" (pages 4-5, section 5).

As per claim 16, Zheng teaches

"regress the functions on a dataset of the respective data source" (pages 4-5, section 5);

"cluster the functions using a K-Harmonic Mean performance function" (pages 3-4, section 3);

"and repeat said regress and cluster sequentially" (pages 4-5, section 5).

As per claim 17, Zheng teaches

"compute common coefficient vectors which compensate for variations between the regressively clustered functions representing the datasets, and wherein each of the processors of the data sources is configured to alter the functions by the common coefficient vectors" (pages 4-5, section 5).

As per claim 18, Zheng teaches

"a plurality of data sources" (data mining, page 1, Abstract);

"and a means for regressively clustering datapoints from the plurality of data sources without transferring data between the plurality of data sources to thereby determine a pattern in data contained in said data sources" (pages 3-4, section 3).

As per claim 19, Zheng teaches

"the means for regressively clustering the datasets comprises a means for applying a regression algorithm and a K-Harmonic Means performance function on the datasets" (pages 3-4, section 3).

As per claim 20, Zheng teaches

"the means for regressively clustering the datasets comprises a means for applying a regression algorithm and a K-Means performance function on the datasets" (pages 1-2, section 1; pages 3-4, section 3).

As per claim 21, Zheng teaches

"the means for regressively clustering the datasets comprises a means for applying a regression algorithm and an Expectation Maximization performance function on the datasets" (pages 1-2, section 1; pages 3-4, section 3).

As per claim 22, Zheng teaches

"collecting dataset information at the central station from the plurality of data sources" (data mining, page 1, Abstract);

"determining a common coefficient vector from the collected dataset information" (pages 4-5, section 5);

"and altering datasets within the plurality of data sources by the common coefficient vector" (pages 4-5, section 5).

As per claim 23, Zheng teaches

""selecting a set number of functions correlating variable parameters of a dataset" (page 1-2, section 1);

"determining distances between datapoints of the dataset and values correlated with the set number of functions" (pages 4-5, section 5);

"regressing the set number of functions using datapoint probability and weighting factors associated with the determined distances" (pages 4-5, section 5);

"calculating a difference of harmonic averages for the distances determined prior to and subsequent to said regressing; and reiterating said regressing, determining and calculating upon determining the difference of harmonic averages is less than a predetermined value" (pages 4-5, section 5).

As per claim 24, Zheng teaches

"a plurality of data sources each having a processor configured to access datapoints within the respective data source" (data mining, page 1, Abstract);

"mine the datapoints of the data sources as a whole without transferring all of the datapoints between the data sources and the central station to thereby determine a pattern in datapoints contained in said data souces" (data mining, page 1, Abstract).

As per claim 25, Zheng teaches

"each of the processors within the plurality of data sources is configured to regressively cluster a dataset within the respective data source" (pages 3-4, section 3).

As per claim 26, Zheng teaches

"collect information pertaining to the regressively clustered datasets" (pages 4-5, section 5);

"and based upon the collected information, calculate common coefficient vectors which balance variations between functions correlating similar variable parameters of the regressively clustered datasets" (page 4-5, section 5).

As per claim 27, Zheng teaches

"compute a residual error from the common coefficient vectors" (page 1, Abstract; pages 4-5, section 5);

"propagate the common coefficient vectors to the data sources upon computing a residual error value greater than a predetermined value" (page 1, Abstract; pages 4-5, section 5);

"and send a message to the data sources to terminate the regression clustering of the datasets upon computing a residual error value less than a predetermined value" (page 1, Abstract; pages 4-5, section 5).

As per claim 28, Zheng teaches

"independently applying a regression clustering algorithm to a plurality of distributed datasets" (pages 3-4, section 3);

"developing matrices from probability and weighting factors computed from the regression clustering algorithm, wherein the matrices individually represent the

distributed datasets without including all datapoints within the datasets" (pages 5-6, section 6);

"determining global coefficient vectors from a composite of the matrices" (pages 4-5, section 5);

"and multiplying functions correlating similar variable parameters of the distributed datasets by the global coefficient vectors to thereby determine a pattern in said datasets" (pages 4-5, section 5).

As per claim 29, Zheng teaches

"repeating said independently applying, said developing, said determining and said multiplying" (pages 4-5, section 5).

As per claim 30, Zheng teaches

"calculating a residue error associated with the global coefficients prior to said multiplying" (page 1, Abstract; pages 4-5, section 5).

Response to Arguments

Applicant's arguments filed 8/3/06 have been fully considered but they are not persuasive.

With regards to Applicant's argument that Zheng does not disclose the combination of a regression algorithm and a K-Harmonic Means performance function, it is noted that Zheng discloses data clustering (pages 3-4, abstract), which is

regression, and uses a k-means algorithm, which is a clustering algorithm (pages 3-4, abstract). Therefore Zheng discloses the limitation.

With regards to Applicant's argument that Zheng does not disclose regressive clustering, it is noted that Zheng discloses data clustering (pages 3-4, abstract), which is regression. Therefore Zheng discloses the limitation.

With regards to Applicant's argument that Zheng does not disclose a plurality of data sources each giving a processor or a central station coupled to the plurality of data sources and comprising a processor, it is noted that Zheng discloses data mining (page 1, section 1, first paragraph), and it is well known in the art that such mining is commonly performed across the Internet and therefore meets these limitations. Therefore Zheng discloses the limitations.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record, listed on form PTO-892, and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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